

THREE NEW SPECIES OF *QUESTOPOGON* DAKIN AND FORDHAM
(DIPTERA : ASILIDAE) FROM AUSTRALIA

G. DANIELS*

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Synopsis

The genus *Questopogon* Dakin and Fordham is recorded from eastern Australia for the first time. Three new species are described: *Q. lineatus* from Queensland and New South Wales; *Q. guttatus* from Western Australia; and *Q. affinis* from South Australia and Western Australia. The male of *Q. clarkii* Dakin and Fordham is also described.

INTRODUCTION

Questopogon clarkii Dakin and Fordham, 1922, type of the monotypic genus *Questopogon* Dakin and Fordham, was described from two females collected at Cunderdin, Western Australia. Hardy (1926, p. 308) recorded two female specimens in South Australian Museum from South Australia which he doubtfully placed in *Questopogon*. Material supplied by Mr. G. F. Gross from the South Australian Museum's collection does not contain these specimens. Hardy (1930, p. 255) also records a female from Denman, New South Wales, in the J. S. Mann collection; the specimen is likely to be *Q. lineatus* sp.n.

The genus is readily distinguished from other Asilid genera by the presence of an apical pair of stout, spine-like, ventral bristles on the fore tibia (Figs 6-8), an apical pair of down-turned, spine-like, ventral bristles on the mid tibia (Fig. 9) and the curved hind basitarsus (Fig. 5).

Collections in which examined material is located are indicated by the following abbreviations: AM Australian Museum, Sydney; ANIC Australian National Insect Collection, CSIRO, Canberra; BM British Museum (Natural History), London; GD author's collection; NMV National Museum of Victoria, Melbourne; SAM South Australian Museum, Adelaide; WAD West Australian Department of Agriculture, Perth.

Key to species of Questopogon

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| 1. Tergites with a greyish yellow stripe along lateral margins | 2. |
| Tergites with golden-yellow spots on posterior corners | .. 3. |
| 2. Fronto orbital hairs distinctly yellow-orange; tarsi black, sharply contrasting with red tibiae; hind femur and tibia red, of uniform colour | <i>Q. lineatus</i> sp.n. |
| Fronto orbital hairs dark or pale rufous; tarsi at most only slightly darker than tibiae; tibiae becoming indistinctly darker apically | <i>Q. affinis</i> sp.n. |
| 3. Claws black; hind basitarsus redish, rarely blackish; tergites densely covered with golden-yellow hairs, forming tessellated "plates" | <i>Q. clarkii</i> Dakin and Fordham |
| Claws yellow, only the apices black; hind basitarsus black; dense yellow hairs only at sides of tergites, without tessellated "plates"; greater part of tergites shining | <i>Q. guttatus</i> sp.n. |

* 98 Harris Street, Fairfield, New South Wales, 2165.

Questopogon clarkii Dakin and Fordham

Figs 1, 5, 6, 11, 12, 16

Questopogon clarkii Dakin and Fordham, 1922 : 525-528, figs 2B, 5, 6, Pl. XV. *Material Examined.* WESTERN AUSTRALIA : 1 ♂ (ANIC), 1 ♀ (WAD), Mullewa, September, L. J. Newman ; 1 ♂ (ANIC), Erady, 8 September 1926, F. W. Ferguson ; 1 ♂, 1 ♀ (ANIC), Morawa, 12 September 1952, McIntosh and Calaby ; 1 ♂, 1 ♀ (ANIC), Pinjara, no date, Goerling ; 1 ♀ (ANIC), Canna, 16 August 1953, T. Lee.

Holotype ♀ and paratype ♀ in BM : Cunderdin, W.A., July-August 1915, presented by Dakin and Fordham.

MALE

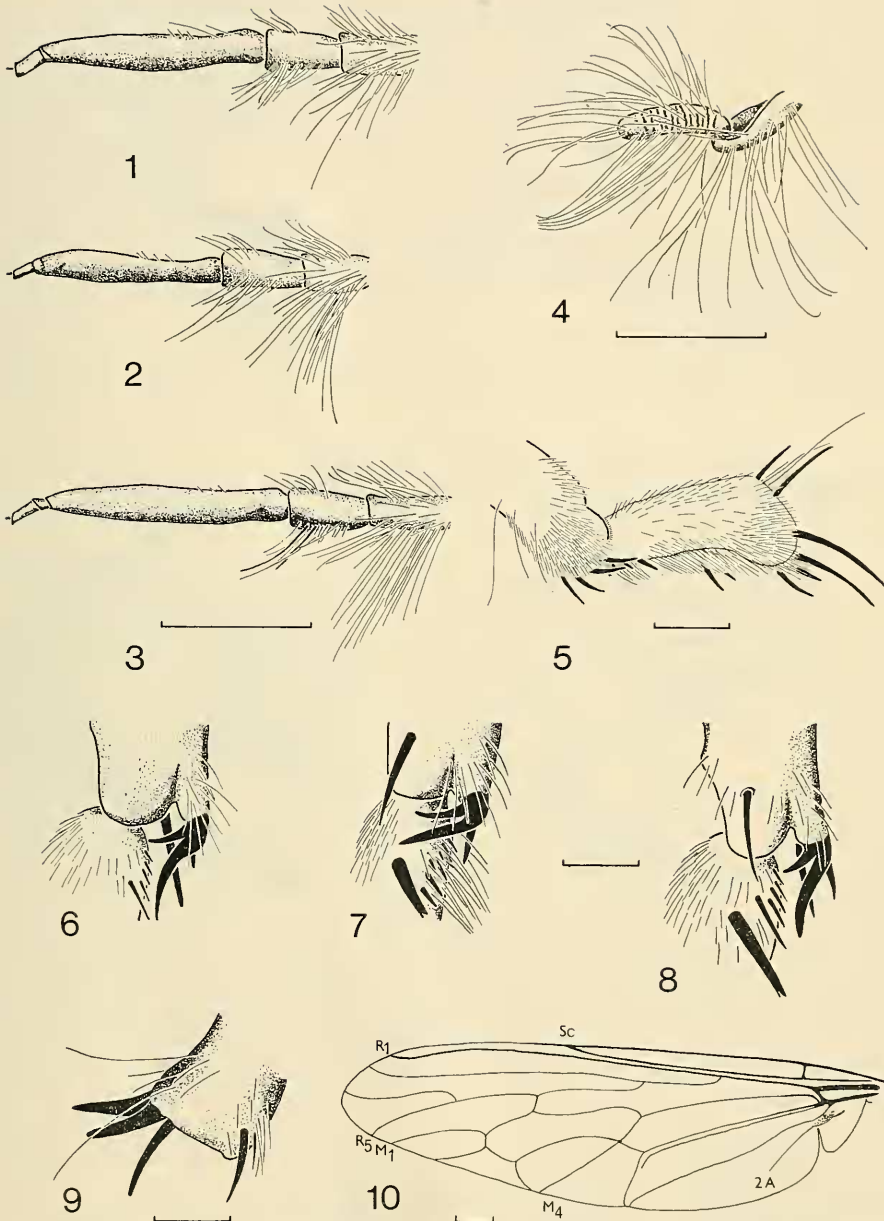
Head. Width 1.7-1.8 height. Frons at narrowest 0.3 width of head. Face well developed and convex, oblique from ventral epistomal margin to base, covered with golden micropubescence. Mystax with numerous, long, stiff, irregularly disposed yellowish hairs, lower elements stouter and erect. Occiput following contour of posterior eye margin to about mid point of eye, then becoming narrower until obliterated by vertex ; occipital pile long, yellowish below and at vertex, with some black pile at middle. Proboscis approximately two-thirds length of eye, shining black with long fine white hairs on basal one-half. Palpi black, corrugated ; segment 1 with yellowish ventral hairs ; segment 2 with black hairs and a few white hairs basally and ventrally ; slightly longer than segment 1 and held distinctly at an angle. Antennae (Fig. 1) black with extremely fine yellow micropubescence ; slightly longer than eye ; attached at upper one-third of head ; segments 1 and 2 sub equal ; segment 3 1.4-1.5 combined lengths of segments 1 and 2, of uniform width for about two-thirds its length then narrowing to width of its base ; bearing a short microsegment, its length being one-third maximum width of segment 3 and followed by a longer, conical truncate, spine tipped microsegment ; segment 1 with numerous stout black hairs on all surfaces, becoming longer ventrally ; segment 2 sub apically with 3 or 4 black dorsal hairs and several longer, stouter, black hairs ventrally ; segment 3 micropubescent, sometimes with a few short fine hairs arising at basal one-third. Frons narrowed level with base of antennae, covered with yellowish micropubescence, with a group of black hairs at base of antennae. Ocellar tubercle with long divergent black bristles.

Thorax. Mesoscutum black, sometimes with an indistinct yellowish, longitudinal, medial line extending to suture ; covered with fine erect black pile ; a yellow pollinose line extends along lateral slopes from pronotum to postalar callus ; 2-4 black notopleurals ; 1 or 2 black or yellow supraalars ; 4 or 5 yellow postalars. Scutellum black with yellow pollinose rim ; 6 or 7 pairs of yellow convergent marginal bristles. Metanotal callosity micropubescent. Lateral slopes of thorax yellow-grey pollinose. Anepisternite, sternopleuron, pleural tergite and mero-pleuron with long, dense, fine yellowish hairs. Halteres yellow.

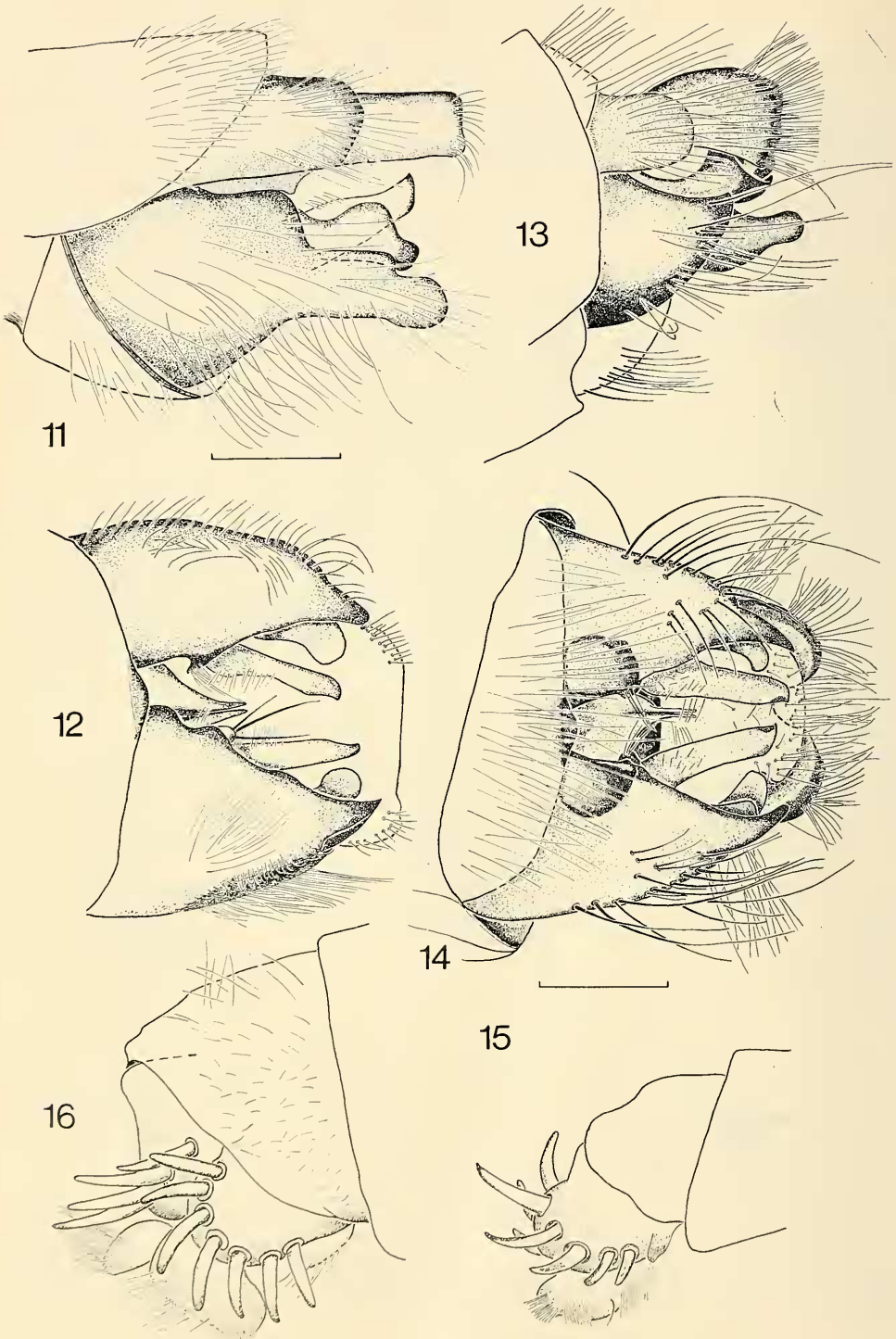
Legs. Coxae black, densely yellow pollinose, with very long yellowish hairs. Femora red-brown with long, fine, erect yellowish hairs, and shorter scattered black elements ; fore and mid femora black dorsally on basal three-quarters and one-half respectively. Tibiae red-brown with black dorsal and yellow ventral hairs ; bristles mostly yellow with black apical elements ; fore tibia black dorsally on apical one-half, apically with a ventral red tubercle bearing 2 strong, twisted black spurs. Fore and mid tarsi black ; hind tarsi with at least basitarsi reddish. Pulvilli yellow. Claws long and black.

Wing. Hyaline with brown suffusion along veins ; basal one-third of marginal cell suffused brown ; basal costal cell brownish. Venation similar to *Q. lineatus*.

Abdomen. Long and broad, black and shining, tapering regularly towards apex. Tergites with long fine yellowish hairs ; tergite 1 with depressed hairs, outwardly



Figs 1-10. Scales=1.00 mm. Figs 1-3. Antennae. 1. *Q. clarkii*. 2. *Q. lineatus*. 3. *Q. guttatus*. Fig. 4. Palpi, *Q. lineatus*. Fig. 5. Hind basitarsus, *Q. clarkii*. Figs 6-8. Fore tibiae. 6. *Q. clarkii*. 7. *Q. lineatus*. 8. *Q. guttatus*. Fig. 9. Mid tibia, *Q. guttatus*. Fig. 10. Wing, *Q. lineatus*.



Figs 11-16. Scales=0.5 mm. Figs 11-12. Male genitalia, *Q. clarkii*. 11. laterally. 12. ventrally. Figs 13-14. Male genitalia, *Q. lineatus*. 13. laterally. 14. ventrally. Figs 15-16. Female genitalia, laterally. 15. *Q. clarkii*. 16. *Q. lineatus*.

directed medially, but normal at sides; tergites 2-5 with anterior hairs depressed laterally towards median line, hairs in middle slightly erect, posteriorly depressed from median line towards the sides, producing a chequered appearance, depending upon the angle from which abdomen is observed; tergites 6 and 7 with similar hairs but directed towards the sides; lateral margin of tergites 2-7 each with a sharply defined golden yellow pollinose spot. Sternites yellow-grey pollinose with long white pile; sternites 1-5 with a variable shining black medial spot. Terminalia small, reddish with pale hairs; tergite 8 reduced and recessed into segment 7 with terminalia. Aedeagus bifid.

FEMALE

Differing from the male in the following characters: one specimen with brown suffusion along veins and in wing cells entirely lacking; tergites 2-6 with lateral spots; tergites 6 and 7 bare and shining; tergite 7 reddish, tergite 6 partly so; terminalia reddish, recessed into segment 7; acanthophorites bearing reddish blunt spines.

DIMENSIONS. Body length, excluding antennae, ♂ 22-24 mm, ♀ 17-26 mm. Length of thorax, ♂ 6.5-8.0 mm, ♀ 6.5-9.0 mm. Length of wing, ♂ 18.5-20.0 mm, ♀ 16.0-23.5 mm.

Questopogon guttatus sp. nov.

Figs 3, 8, 9

Holotype. ♀ (ANIC), Pithara, W.A., 3 October 1933, M. Fuller.

FEMALE

Similar to *Q. clarkii* in most characters and differing principally as indicated below.

Head. Width 1.7 height. Mystax with a few scattered dark hairs dorsally. Proboscis about as long as eye, orange on apical margin.

Thorax. Mesoscutum black, without yellowish medial line. Three black notopleurals; 2 black supraalars; 4 or 6 yellow postalars. Scutellar margin with 6 pairs of yellow convergent bristles.

Legs. Tibiae with at least basal one-half black. Tarsi completely black. Pulvilli yellowish. Claws yellow, apical one-third black.

Wings. Hyaline with narrow yellowish suffusion along veins; veins black to deep rufous. Marginal cell entirely hyaline; basal costal cell with indistinct yellowish suffusion.

Abdomen. Tergites with long fine yellow hairs, becoming longer on lateral slopes, without chequered appearance; tergites 2-5 with golden pollinose spots on posterior corners; tergite 1 with greyish yellow pollinosity on lateral margin; tergites 6 and 7 black, shining; tergite 8 shining black, recessed into segment 7. Six pairs of blunt reddish spines on acanthophorites.

DIMENSIONS. Body length, excluding antennae, 24 mm. Length of thorax, 8.5 mm. Length of wing, 20.5 mm.

MALE

Unknown.

Questopogon lineatus sp. nov.

Figs 2, 4, 7, 10, 13, 14, 15

Holotype. ♂ (ANIC), 17 miles SSW. Bohema, Pilliga Scrub, N.S.W., 7 April 1951, Key and Chinnick.

Paratypes. QUEENSLAND: 1 ♂, 1 ♀ (AM), Carnarvon Range, February and March 1944, N. Geary; 1 ♂ (GD), Carnarvon Gorge, 7 September 1971, M. S. Moulds; 1 ♂ (ANIC), 27 miles SSE. Tambo, 2 March 1957, Key and Chinnick.

NEW SOUTH WALES : 1 ♀ (GD), 5 miles S. Mendooran, 1 April 1972, G. Daniels ; 1 ♂, 6 ♀ (GD), 3 miles SW. Mount Tomah, Blue Mountains, 2 March 1974, G. Daniels.

MALE

Head. Width 1.3–1.7 height. Frons narrowed level with antennal base, at this point 0.2–0.3 head width, with a group of orange-yellow hairs above antennal bases. Face well developed and convex, oblique from ventral epistomal margin to base ; golden micropubescent. Mystax with numerous long stiff irregularly disposed yellowish hairs ; lower elements stouter, white and erect. Occiput following contour of posterior margin of eye to about mid point, then becoming narrower until obliterated at vertex ; occipital pile long, pale yellow, and below not as fine as *Q. clarkii*, moderately dense at vertex, reaching almost to eye margin. Proboscis almost as long as eye. Palpi 2 segmented, black with pale yellow hairs ; segment 2 strongly corrugate, slightly longer than segment 1 and held distinctly at an angle, with offset attachment. Antennae slightly longer than eye, attached at upper one-third of head ; black with yellowish micropubescent ; hairs pale yellow ; segments 1 and 2 sub equal ; segment 3 1.4–1.5 combined lengths of segments 1 and 2, of uniform width for about two-thirds its length, then narrowed to almost one-third its maximum width ; bearing a short microsegment followed by a longer conical, truncate, spine tipped microsegment ; segment 1 with numerous stout yellow hairs on all surfaces, being longer ventrally ; segment 2 with yellow dorsal hairs and several longer, stouter yellow hairs ventrally ; segment 3 micropubescent only. Ocellar tubercle with long divergent black bristles ; 5–8 slightly shorter black hairs in vertex.

Thorax. Mesoscutum black, shining, with yellowish medial and sub medial stripes extending to scutellar suture ; covered with fine erect black pile ; a yellow pollinose band extends along lateral slopes to scutellum. Three or 4 notopleurals ; 2 or 3 supraalars and 3–5 postalar bristles, dark yellow to black. Scutellum yellow pollinose, with 4–6 pairs of convergent yellow marginal bristles. Metanotal callosity micropubescent. Halteres yellow.

Legs. Coxae grey pollinose. Tibiae and femora red. Fore femur with a large black stripe on basal two-thirds, covering anterior to posterior surfaces ; apical spines twisted towards dorsal surface. Tarsi black. Pulvilli yellow. Claws yellow, apical one-half black. Bristles on legs red.

Wing. Hyaline. Basal costal cell yellow.

Abdomen. Shining, blue-black, elongated and as wide as mesoscutum. Tergal pile long, pale yellow, not dense, sub erect ; lateral slopes of tergites 1–7 with a narrow uninterrupted stripe of greyish yellow dusting ; tergite 8 reduced, shining black, concealed by tergite 7. Sternites grey pollinose, with long suberect white pile, and with a distinct, narrow, black medial longitudinal line. Terminalia yellowish, recessed into segment 7. Aedeagus bifid.

FEMALE

Differing from male in the following characters : head width 1.6–1.7 height ; antennal segment 3 1.3–1.5 combined lengths of segments 1 and 2 ; 2–4 supraalars ; 4–6 postalars ; 3–5 pairs scutellar bristles ; tergites 1–5 with narrow uninterrupted stripe ; tergites 6 and 7 completely shining black ; terminalia tawny, partly recessed into segment 7 ; acanthophorites each with 7 or 8 comparatively stout blunt spines.

DIMENSIONS. Body length, excluding antennae, ♂ 23.0–29.0 mm, ♀ 20.5–26.5 mm. Length of thorax, ♂ 6.0–8.0 mm, ♀ 7.0–9.0 mm. Length of wing, ♂ 14.5–19.0 mm, ♀ 15.5–21.0 mm.

Habitat. Specimens from Mount Tomah were taken in a clearing amongst dry sclerophyll forest where they frequently rested on the ground. The Mendooran specimen was taken in dry sclerophyll forest, flying amongst low dry grass.

Questopogon affinis sp. nov.

Holotype. ♂ (NMV), Booyana, W.A., November 1932, Miss Baesjou.

Paratype. ♀ (SAM), Kimba, S.A., no date, E. Broomhead.

MALE

Very similar in most characters to *Q. lineatus* and agreeing with the description given for that species except as indicated below.

Head. Width 1·8 height. Frons 0·3 width of head. Face with fulvous micropubescence. Antennae slightly shorter than length of eye; segment 1 with numerous stout yellowish hairs, with a few black elements scattered throughout; segment 2 with 4–6 black dorsal hairs on apical one-half and ventrally with several longer stouter black hairs. Frons with an irregular row of dark rufous fronto-orbital hairs and a group of dark rufous hairs arising from an indistinct gibbosity above antennal bases. Ocellar tubercle with long, divergent, dark rufous hairs.

Thorax. Mesoscutum black, with a greyish yellow pollinose line along lateral margin extending from humeral callus to postalar callus; an indistinct brownish, longitudinal sub-medial line extends from anterior margin for about one-third mesoscutal length; a greyish dorsocentral triangle borders sub-medial line for its length; 3 or 4 black notopleurals; 4 black supraalars; 3 yellow postalars. Scutellum black with yellowish micropubescence; 6 pairs of yellow convergent marginal bristles.

Legs. Femora with long, erect, fine yellow hairs. Tibiae indistinctly darkened apically. Fore tibia with a darkened tubercle bearing a pair of dark red spines. Tarsi black. Claws yellow, apical one-half black.

Wing. Hyaline with narrow yellow suffusion along veins. Veins reddish to black. Marginal and basal costal cells hyaline.

Abdomen. Tergites with long fine yellowish sub appressed hairs; lateral margin of tergites 1–7 with a greyish yellow pollinose line. Sternites grey pollinose, with sub appressed white pile, with a distinct narrow, black medial longitudinal line. Terminalia deep rufous, recessed into segment 7.

FEMALE

Differing from the male in the following characters: Head width 1·7 height; hairs above antennal bases mainly pale rufous with a few black elements dorsally; occipital pile whitish; mesoscutum dull black with indistinct brownish submedial lines; legs uniform red-brown; tarsi becoming slightly darker apically; basal costal wing cell hyaline; abdomen shining, brownish black.

DIMENSIONS. Body length, excluding antennae, ♂ 26·5 mm, ♀ 26·0 mm. Length of thorax, ♂ 8·5 mm, ♀ 6·5 mm. Length of wing, ♂ 20·5 mm, ♀ 16·8 mm.

The female is paler than the male, but agrees structurally, in pattern, and in hairing of the abdomen, is obviously immature and is probably placed correctly here. It also bears the label "Type. *Questopogon vittatus*, n. sp. F. M. Hull"; this appears to be a manuscript name only.

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